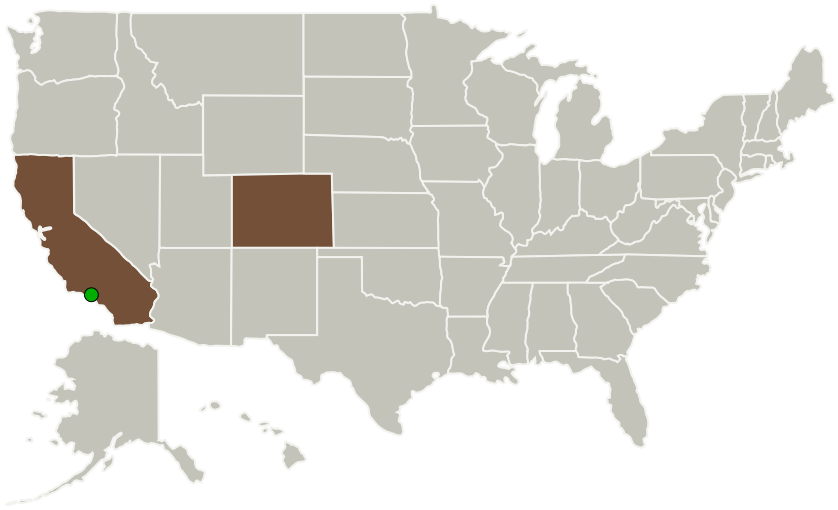
High Frequency Reflective Mesh for Small Aperture Antennas, Phase II

Completed Technology Project (2017 - 2019)

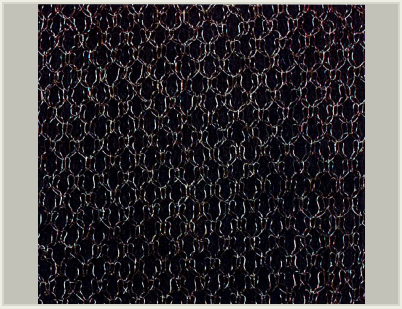
Project Introduction

The proposed Phase II program would develop and prototype a high frequency, high performance reflective mesh that is well suited to the emerging small aperture antenna designs. The program will build on the testing knowledge of the Phase I prototyped mesh. 40 OPI gold mesh will be prototyped and integrated to a cubesat Ka-band reflector. Carbon nanotube yarn will also be knitted into a 30 OPI mesh and tested on a similar antenna. The Phase II program will move the mesh to TRL 6. The goal is to make cost effective and robust mesh for the small aperture antenna community. RF test samples and a complete deployable Ka-band antenna will be delivered to NASA JPL for RF testing.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Tendeg LLC	Lead Organization	Industry Small Disadvantaged Business (SDB)	Louisville, Colorado
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California



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Completed Technology Project (2017 - 2019)

Primary U.S. Work Locations	
California	Colorado

Project Transitions

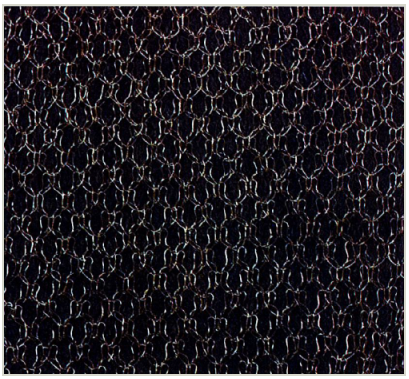
April 2017: Project Start

September 2019: Closed out

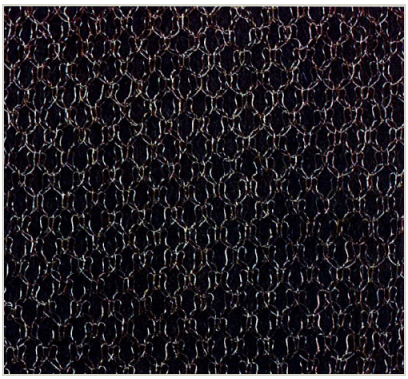
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140832)*

Images



Briefing Chart Image
High Frequency Reflective Mesh for Small Aperture Antennas, Phase II Briefing Chart Image *(https://techport.nasa.gov/image/127102)*



Final Summary Chart Image
High Frequency Reflective Mesh for Small Aperture Antennas, Phase II *(https://techport.nasa.gov/image/131181)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Tendeg LLC

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

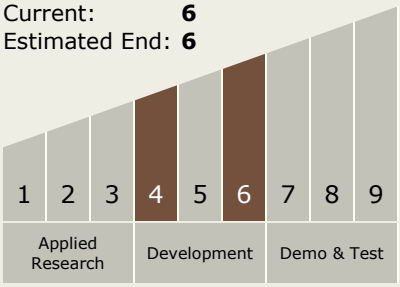
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Gregg Freebury

Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



High Frequency Reflective Mesh for Small Aperture Antennas, Phase II

Completed Technology Project (2017 - 2019)

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.2 Observatories
    - TX08.2.2 Structures and Antennas

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System